

Subpart 7

1. An illuminated surgical retractor comprising:
 - a handle member having a first handle member end portion and a second handle member end portion;
 - a first elongate section having a first elongate proximal end portion, a first elongate distal end portion, and a first elongate inner surface extending from the first elongate proximal end portion to near the first elongate distal end portion and having a substantially non-linear shape, the second handle member end portion of said handle member pivotally connected to the first elongate distal end portion of said first elongate section such that said handle member forms an adjustable acute angle with said first elongate section;
 - a second elongate section having a second elongate proximal end portion, a second elongate distal end portion, and a second elongate outer surface extending from the second elongate proximal end portion to near the second elongate distal end portion, and a second elongate inner surface extending from the second elongate proximal end portion to near the second elongate distal end portion, said second elongate section connected to said first elongate section such that said first and second elongate sections are substantially parallel; and
 - said second handle member end portion having a pivotal connector associated therewith and said pivotal connector pivotally couples the first elongate section and the handle member and said second handle member end portion is adapted to optically couple the second elongate section to a source of illumination so that said second elongate section is substantially illuminated.
2. The illuminated surgical retractor of claim 1, wherein the shape of the first elongate inner surface is selected from the group consisting of curved and bent.
3. The illuminated surgical retractor of claim 2, wherein the shape of the first elongate inner surface is bent, and wherein the second elongate outer surface has a bent shape that substantially corresponds to the bent shape of the first elongate inner surface.

4. The illuminated surgical retractor of claim 3, wherein the first elongate inner surface is bent at an angle in the range of about 80° to 175°.

5. The illuminated surgical retractor of claim 4, wherein the first elongate inner surface is bent at an angle in the range of about 140° to 160°.

6. The illuminated surgical retractor of claim 2, wherein the shape of the first elongate inner surface is curved, and has a radius of curvature in the range of about 1.0 inch to 5.0 inches.

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7. The illuminated surgical retractor of claim 6, wherein the second elongate outer surface has a shape that differs from the curved shape of the first elongate section prior to connection thereof to the first elongate section, and that substantially conforms to the shape first elongate section following connection of thereof to the first elongate section.

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8. The illuminated surgical retractor of claim 7, wherein the conformation of the shape of the second elongate section to the first elongate section is reversible upon disconnecting the first elongate section and the second elongate section.

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9. The illuminated surgical retractor of claim 1, wherein the proximal end portion of the second elongate section culminates in a chamfered surface at an angle in the range of about 30° to 60°.

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10. An illuminated surgical retractor comprising:

a handle member having a first handle member end portion and a second handle member end portion;

5 a first elongate section having a lengthwise dimension and a first elongate proximal end portion, a first elongate distal end portion, and a first elongate inner surface extending from the first elongate proximal end portion to near the first elongate distal end portion and having a substantially non-linear shape therebetween, the second handle member end portion of said handle member operatively connected to the first elongate distal end portion
10 of said first elongate section such that said handle member forms an acute angle with said first elongate section;

a second elongate section having a lengthwise dimension and a second elongate proximal end portion, a second elongate distal end portion and a second elongate outer surface extending from the second elongate proximal end portion to near the second elongate distal end portion, and a
15 second elongate inner surface extending from the second elongate proximal end portion to near the second elongate distal end portion, said second elongate section being generally aligned with the lengthwise dimension of the first elongate section, said second elongate section defining an illumination
20 output portion; and

said second handle member end portion having a pivotal connector associated therewith and said pivotal connector pivotally couples the first elongate section and the handle member and said second handle member end portion is adapted to optically couple the second elongate section to a
25 source of illumination so that said second elongate section is illuminated.

11. The illuminated surgical retractor of claim 10, wherein the shape of the first elongate inner surface is selected from the group consisting of curved and bent.

12. The illuminated surgical retractor of claim 11, wherein the shape of the first elongate inner surface is bent, and wherein the second elongate outer surface has a bent shape.

13. The illuminated surgical retractor of claim 12, wherein the first elongate inner surface is bent at an angle in the range of about 80° to 175°.

14. The illuminated surgical retractor of claim 11, wherein the shape of the first elongate inner surface is curved, and has a radius of curvature in the range of about 1.0 inch to 5.0 inches.

15. The illuminated surgical retractor of claim 14, wherein the second elongate outer surface has a shape that differs from the curved shape of the first elongate section prior to connection thereof to the first elongate section, and that substantially conforms to the shape first elongate section following connection of thereof to the first elongate section.

16. The illuminated surgical retractor of claim 15, wherein the conformation of the shape of the second elongate section to the first elongate section is reversible upon disconnecting the first elongate section and the second elongate section.

17. The illuminated surgical retractor of claim 10, wherein at least a portion of said second elongate section is surrounded by at least a portion of said first elongate section.

18. The illuminated surgical retractor of claim 10, wherein the first elongate section includes an insertion area shaped to receive at least a portion of said second elongate section therein.

19. The illuminated surgical retractor of claim 18, wherein the insertion area of the first elongate section is a substantially U-shaped flap.

20. The illuminated surgical retractor of claim 10, wherein the proximal end portion of the second elongate section culminates in a chamfered surface at an angle in the range of about 30° to 60°.

21. An illuminated surgical retractor for use in a patient comprising:
a handle member having a first handle member end portion and a
second handle member end portion;

5 a first elongate section having a first elongate proximal end portion, a
first elongate distal end portion, and a first elongate inner surface extending
from the first elongate proximal end portion to near the first elongate distal
end portion and having a substantially non-linear shape, the second handle
member end portion of said handle member connected to said first elongate
10 elongate section such that said handle member forms an acute angle with said first
elongate section;

a second elongate section having a second elongate proximal end
portion, a second elongate distal end portion and a second elongate outer
surface extending from the second elongate proximal end portion to near the
second elongate distal end portion, and a second elongate inner surface
15 extending from the second elongate proximal end portion to near the second
elongate distal end portion, said second elongate section connected to said
first elongate section such that said first and second elongate sections are
substantially aligned, the second elongate distal end portion of said second
elongate section defining an illumination output member; and

20 an insertion area on the proximal end portion of the first elongate
section for the receipt of at least a portion of the second elongate section
therein.

22. The illuminated surgical retractor of claim 21, wherein the insertion
25 area is a substantially U-shaped flap.

23. The illuminated surgical retractor of claim 21, wherein the shape of
the first elongate inner surface is selected from the group consisting of
curved and bent.

30 24. The illuminated surgical retractor of claim 23, wherein the shape of
the first elongate inner surface is bent, and wherein the second elongate
outer surface has a bent shape that substantially corresponds to the bent
shape of the first elongate inner surface.

25. The illuminated surgical retractor of claim 24, wherein the first elongate inner surface is bent at an angle in the range of about 80° to 175°.

26. The illuminated surgical retractor of claim 23, wherein the shape of the first elongate inner surface is curved, and has a radius of curvature in the range of about 1.0 inch to 5.0 inches.

27. The illuminated surgical retractor of claim 26, wherein the second elongate outer surface has a shape that differs from the curved shape of the first elongate section prior to connection thereof to the first elongate section, and that substantially conforms to the shape first elongate section following connection of thereof to the first elongate section.

28. The illuminated surgical retractor of claim 27, wherein the conformation of the shape of the second elongate section to the first elongate section is reversible upon disconnecting the first elongate section and the second elongate section.

29. The illuminated surgical retractor of claim 21, wherein said handle member is operatively connected to said first elongate section by a pivotal connector.

30. The illuminated surgical retractor of claim 29, wherein said pivotal connector enables said second elongate section to be interchangeable with respect to the first elongate section.

31. The illuminated surgical retractor of claim 21, wherein at least a portion of said first elongate section substantially surrounds at least a portion of said second elongate section, and said at least a portion of said second elongate section is removable therethrough.

32. The illuminated surgical retractor of claim 21, wherein said second elongate section is laterally insertable into engagement with said first elongate section.

33. The illuminated surgical retractor of claim 21, wherein said first elongate section is rotatable with respect to said handle member for removal therefrom.

5 34. The illuminated surgical retractor of claim 21, wherein the proximal end portion of the second elongate section culminates in a chamfered surface at an angle in the range of about 30° to 60°.

35. An illuminated surgical retractor comprising:
10 a handle member having a first handle member end portion and a second handle member end portion and at least a portion thereof that is illuminated in use;
a first elongate section having a first elongate proximal end portion, a first elongate distal end portion, and a first elongate inner surface extending
15 from the first elongate proximal end portion to near the first elongate distal end portion and having a substantially curved shape, the second handle member end portion of said handle member connected to the first elongate distal end portion of said first elongate section such that said handle member is pivotal with respect thereto and forms an acute angle with said
20 first elongate section;
a second elongate section having a second elongate proximal end portion, a second elongate distal end portion, and a second elongate outer surface extending from the second elongate proximal end portion to near the second elongate distal end portion, and a second elongate inner surface
25 extending from the second elongate proximal end portion to near the second elongate distal end portion, the second elongate distal end portion of said second elongate section defining an illumination output member.

36. The illuminated surgical retractor of claim 35, wherein the curved
30 first elongate inner surface has a radius of curvature in the range of about 1.0 inch to 5.0 inches.

37. The illuminated surgical retractor of claim 36, wherein the second elongate outer surface has a shape that differs from the curved shape of the first elongate section prior to connection thereof to the first elongate section, and that substantially conforms to the shape first elongate section following
5 connection of thereof to the first elongate section.

38. The illuminated surgical retractor of claim 37, wherein the conformation of the shape of the second elongate section to the first elongate section is reversible upon disconnecting the first elongate section and the
10 second elongate section.

39. The illuminated surgical retractor of claim 35, wherein said second elongate section includes a shaft shaped portion that is substantially enclosed by at least a portion of said first elongate section.
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40. The illuminated surgical retractor of claim 35, wherein said first elongate section is pivotal with respect to said handle member.

41. The illuminated surgical retractor of claim 35, wherein the acute
20 angle formed between said handle member and said first elongate section is pivotal from about 30° to 95°.

42. The illuminated surgical retractor of claim 35, wherein the proximal end portion of the second elongate section culminates in a chamfered
25 surface at an angle in the range of about 30° to 60°.

43. An illuminated surgical retractor comprising:

a handle member having a first handle member end portion and a second handle member end portion;

5 a first elongate section having a first elongate proximal end portion and a first elongate distal end portion, with a first elongate inner surface extending between the first elongate proximal end portion and the first elongate distal end portion, the first elongate inner surface having a substantially bent shape, wherein said second handle member end portion of said handle member is connected to said first elongate section;

10 a second elongate section having a second elongate proximal end portion and a second elongate distal end portion with a second elongate outer surface extending between the second elongate proximal end portion and the second elongate distal end portion, a second elongate inner surface extending between the second elongate proximal end portion and the second elongate distal end portion, the second elongate distal end portion of said second elongate section defining an illumination input end portion;

15 a connector releasably coupling the illumination input end portion to an optical cable; and

20 a pivotal connector pivotally coupling the handle member to the first elongate section.

44. The illuminated surgical retractor of claim 43, wherein the second elongate outer surface has a bent shape that substantially corresponds to the bent shape of the first elongate inner surface.

25 45. The illuminated surgical retractor of claim 43, wherein the first elongate inner surface is bent at an angle in the range of about 80° to 175°.

30 46. The illuminated surgical retractor of claim 43, wherein the proximal end portion of the second elongate section culminates in a chamfered surface at an angle in the range of about 30° to 60°.

47. The illuminated surgical retractor of claim 43, wherein said first elongate section includes a substantially U-shaped insertion loop to allow for releasable connection of said second elongate section to said first elongate section.

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48. An illuminated surgical retractor for illuminating the subcutaneous space between a vessel and the subcutaneous tissue of a patient, the retractor comprising:

10 a handle member having a first handle member end portion and a second handle member end portion with a gripping area therebetween for gripping by the user and an optical cable extending therethrough;

an elongate first elongate section having:

15 a first elongate proximal end portion, and
a first elongate distal end portion with a first elongate inner surface extending between the first elongate proximal end portion and the first elongate distal end portion, said first elongate inner surface having a substantially bent shape, wherein the angle of bending of the first elongate surface is in the range of about 80° to 175°,

20 the second handle member end portion of said handle member being connected to the first elongate section;

a second elongate section being formed to direct light laterally therefrom, and beyond the first elongate section, the second elongate section having:

25 a second elongate proximal end portion that culminates in a chamfered surface at an angle in the range of about 30° to 60°, and

30 a second elongate distal end portion with a second elongate inner surface and a second elongate outer surface each extending between the second elongate proximal end portion and the second elongate distal end portion, the second elongate inner and outer surfaces each having a bent shape that substantially corresponds to the bent shape of the first elongate inner surface, the second elongate section further including an illumination input end portion thereon, wherein at least a portion of said illumination input end portion is substantially surrounded by a portion of said first elongate section;

a connector optically coupling the illumination input end portion to the optical cable;

5 a pivotal connector for pivotally connecting the handle member and the first elongate section such that the first elongate section is movable at an acute angle relative the handle member; and

10 a substantially U-shaped flap extending from the first elongate section and into which the second elongate section is insertable, wherein at least a portion of said second elongate section, once inserted into the insertion area of the first elongate section, is laterally removable therefrom.